NEWS REPORT

National Academy of Sciences National Research Council

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The Biology Council

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Executive Secretary, Biology Council

THE Biology Council, created by the Division of Biology and Agriculture of the National Academy of Sciences–National Research Council, was established to study trends and needs in the biological sciences. Supported by Government agencies interested in improving their biological research, the Council is composed of 18 members selected to cover the whole field from molecular biology to environmental biology. Each of the members serves a term of six years under a plan of rotation providing for the replacement of three members each year.

Since its first meeting in January 1954, the Biology Council has been gradually evolving its present operational structure. From the body of the Council five standby committees have been established in the areas represented by the following titles: *1*) Molecular and Cellular Biology, with F. O. Schmitt as chairman; *2*) Genetic and Systematic Biology, with B. P. Kaufmann as chairman; *3*) Developmental Biology, with Paul Weiss as chairman; *4*) Regulatory Biology, with Ralph Gerard as chairman; and *5*) Environmental and Group Biology, with Stanley Cain as chairman. The efforts of each committee are augmented by the activity of certain non-Council scientists who have been invited to serve with them. It is the responsibility of these "area" committees to maintain careful watch, by whatever means prove effective, of the trends and needs in their respective spheres and to inform the parent body as circumstances indicate. The program of the former divisional Committee on Developmental Biology, which became an area committee of the Council on July 1, has been in many ways a precursor of the activity planned for all of these units in the future.

Specific problems arise within the Council as a result of its group deliberations, of the activities of its area committees, or as a result of requests brought to it by interested parties. When judged by the Council to merit action, a task force is formed within the Council to examine the matter in a preliminary way. There now are, for example, active task forces dealing with *1*) public relations, *2*) conceptual framework of biology, *3*) research structure and support, *4*) biological materials, and *5*) techniques and technician training. Plans have been laid for a task force on publication policies and for one on utilization of the backlog of scientific information.

A typical task force activity is that on public relations under the chairmanship of B. P. Kaufmann assisted by three non-Council members—Vernon Bryson, Robert Campbell, and Carl Kaufmann. At a meeting in January 1954, each Biology Council member was instructed to submit to Dr. Kaufmann his individual comments on the problem at hand. These were collated and

presented as a draft manuscript two months later. Subsequently the task force has surveyed press, radio, and television coverage and prepared a supplement to the original paper, based on this survey. These manuscripts recognize the problem which biology, indeed all the sciences, faces and enumerate some ten media through which the public may be reached. Indications now are that limited success is being achieved through occasional magazines, television programs, and through the personal efforts of eminent scientists and laymen. Quantitatively, newspaper coverage in biology fares well in relation to other sciences, especially if medicine be included in a tabulation. Qualitatively, the situation is far less promising. Integration of the two manuscripts and subsequent revision into publishable form on the basis of comments and criticisms received from Biology Council members is the next step.

Essentially similar treatment has been accorded the manuscripts on "Research Structure and Support" by H. B. Tukey and E. L. Tatum and "Biological Materials" by Ernst Mayr and Richard Goodwin. In discussing research support, Drs. Tukey and Tatum stress the need for support of basic research and for educating those who provide this support; they cite the several sources of research funds, point out certain areas in special need of assistance, and emphasize the desirability of having scientists in administrative positions, of establishing postdoctoral fellowships, of employing retired workers, and of subsidizing publication. Mayr and Goodwin, after recognizing the place of living materials, devote the bulk of their manuscript to collections of preserved materials. Having established that museums are centers of documentation, research, education, and information, they discuss the almost critical problems of the mounting costs of acquiring and maintaining museum collections and of recruiting adequate staffs.

The task force handling conceptual principles of biology under Ralph Gerard will hold a three-day work conference for a group of perhaps a dozen persons of demonstrated interest, proven ability, and catholic outlook on October 12–14. An estate in the Berkshires near Lee, Mass., has been chosen as the site of this conference, and every effort will be made to provide surroundings conducive to an intensive analysis of the problem. There is general agreement in the Council that first there should be a well hammered-out conceptual structure, then demonstrations of its general applicability in various subject matter areas. Reduction in terminology, enhancement of understanding, and mitigation of the confusion which arises in historical development are some of the immediate benefits to be derived from establishing valid generalizations. Ultimately, the goal is to influence the teaching process, and thus the entire future of biology, favorably.

Obviously there is not, and should not be, any attempt to standardize the scope, amount, and duration of the task force programs. Perhaps they can be most readily characterized as ad hoc units operating within the Council and on Council funds to focus and explore specific problems and to recommend appropriate actions.

When, not infrequently, a situation is seen clearly to need action larger than that suitable to a task force, a Council committee is formed. Such a committee must sooner or later receive independent support and will usually have a permanent staff. Thus the Committee on Educational Policies, under the chairmanship of Dean Howard Phillips, has become a part of the Biology Council. This group, including John Behnke, Thomas Hall, John Hannah, T. M. Painter, E. Laurence Palmer, Donal Sheehan, and Milton Lee (ex officio) was organized as a divisional committee in January 1954 in accordance with the recommendations of an earlier Conference on Biological Education held in May 1953. Initially supported by the National Science Foundation, the Committee now operates under a three-year grant from the Rockefeller Foundation. Six subcommittees have been established, covering pre-college through adult education and including publications and technician training. These subcommittees are being staffed and are meeting to develop deliberative and action programs. Activities of the Committee on Educational Policies also include liaison with other organizations having related in-

terests and participation in symposia, conferences, and institutes, aimed at improvement of teaching and alleviation of other educational difficulties. A proposed series of sound-film lectures in biology is under consideration and a comprehensive survey of literature is progressing.

A Council committee may also be a normal outgrowth of specific task force activity, as for example the task force on Technique and Technician Training under F. O. Schmitt. In response to the task force's recommendation, an exploratory committee composed of experts in instrumentation, biologists, and representatives of government and industry met on April 28 to examine the feasibility of a central, or regional, "institute of instrumentation" and the desirability of establishing a working committee to explore the problem in detail. As a result of these deliberations a more or less permanent organization is being set up with Paul Klopsteg, formerly Associate Director of the National Science Foundation, as consultant. Dr. Klopsteg will make a one-year analysis of the problem for the Biology Council.

The Council, its standby area committees, specific task forces, and Council committees form the framework on which the Division of Biology and Agriculture assesses the interrelations between *1*) the various disciplines in the life sciences, *2*) the biological sciences and the physical and social sciences, and *3*) the various interdependent tributaries to the furtherance of biology; namely, education, research, communication, public relations, manpower, economics, and administration.

Needless to say, the validity of such an assessment, and the success of the Council's efforts to improve the situation wherever and whenever it finds need, must be judged not in terms of months or even of a few years, but in decades. The foregoing paragraphs attempt to show a few of the initial points of contact between the Council and its overall problem.

In the near future, the Council plans a number of miscellaneous activities not strictly within the framework outlined above. Among these are: *1*) convocation of a meeting of private foundation administrators to encourage their self-assessment of a fraction of research funds as contribution to a common pool for the support of uncommitted research; *2*) integration and coordination of symposium, workshop, and travel programs among institutions, agencies, and foundations supporting such programs for greater effectiveness and economy of manpower and funds; *3*) examination of the whole problem of publications and publication policies through the medium of a conference of interested and informed persons; and *4*) institution of a program of "research clinics" designed to furnish advice and counsel to the research efforts and graduate programs of the smaller departments and biology staffs.

SCIENCE NEWS

INTERNATIONAL GEOPHYSICAL YEAR INSTRUMENTED SATELLITE PROGRAM

On behalf of the U. S. National Committee for the International Geophysical Year, Detlev W. Bronk, President of the National Academy of Sciences, and Alan T. Waterman, Director of the National Science Foundation, announced on July 29 plans for the construction of a small, unmanned, earth-circling satellite vehicle to be used for basic scientific observations during the International Geophysical Year in 1957–58. The project which is entirely scientific in nature, will be sponsored by these two organizations as part of the United States program of participation in the International Geophysical Year.

The program for such a satellite vehicle was stimulated by the following resolution passed by the Special Committee for the International Geophysical Year (CSAGI) at its Rome meeting in October 1954: "In

view of the great importance of observations during extended periods of time of extraterrestrial radiations and geophysical phenomena in the upper atmosphere, and in view of the advanced state of present rocket techniques, CSAGI recommends that thought be given to the launching of small satellite vehicles, to their scientific instrumentation, and to the new problems associated with satellite experiments, such as power supply, telemetering, and orientation of the vehicle." The International Scientific Radio Union and the International Union of Geodesy and Geophysics passed similar resolutions at their General Assemblies in September 1954.

The U. S. National Committee for the International Geophysical Year believes that significant scientific data may be gathered as a result of this program in such fields as geodesy, atmospheric physics, ionospheric physics, auroral physics, and solar radiation. The National Committee invites the other nations engaged in the International Geophysical Year program to participate and to this end will provide full scientific information on the orbiting vehicle so that the other nations may monitor the device and make appropriate observations. The U. S. National Committee is looking forward to the interest and cooperation of other nations.

The entire program for the International Geophysical Year is under the sponsorship of the International Council of Scientific Unions which established the Special Committee (CSAGI) to plan, organize, and direct the cooperative efforts of the forty or more participating nations.

CONFERENCE ON PEACEFUL USES OF ATOMIC ENERGY

The United Nations Conference on the Peaceful Uses of Atomic Energy will be held at Geneva, Switzerland, from August 8 to 20. Among the members of the United States Delegation approved by the President of the United States are three members of the National Academy of Sciences—Detlev W. Bronk, President of the Academy and President of the Rockefeller Institute for Medical Research; Willard F. Libby, Member of the U. S. Atomic Energy Commission; and I. I. Rabi, Chairman of the General Advisory Committee to the U. S. Atomic Energy Commission and Professor of Physics, Columbia University. Lewis L. Strauss, Chairman of the U. S. Atomic Energy Commission, will serve as chairman of the delegation. Shields Warren, Scientific Director of the Cancer Research Institute, New England Deaconess Hospital, is the fifth member.

INVITATION TO SOVIET ACADEMY ATOMIC ENERGY SESSION

The National Academy of Sciences recently received an invitation from the Soviet Academy of Sciences to send three academicians to its session on the peaceful uses of atomic energy. The exchange of cablegrams between the Academies is reprinted below:

"PRESIDENT DETLEV BRONK
NATIONAL ACADEMY OF SCIENCES
2101 CONSTITUTION AVENUE
WASHINGTON, D. C.

USSR ACADEMY OF SCIENCES HOLDS ITS SESSION ON PEACEFUL USES OF ATOMIC ENERGY IN MOSCOW 1-5 JULY 1955 STOP PRESIDIUM OF ACADEMY WILL BE GLAD IF NATIONAL ACADEMY OF SCIENCES DEEMS IT POSSIBLE TO SEND THREE OF THEIR SCIENTISTS WORKING IN THAT FIELD TO THIS SESSION AS OUR TWO WEEKS GUESTS STOP ALL EXPENSES CONNECTED WITH THEIR STAY HERE INCLUDING THOSE OF TRAVEL THROUGHOUT USSR WILL BE PAID BY ACADEMY.

PRESIDENT USSR ACADEMY
OF SCIENCES
ACADEMICIAN NESMEYANOV"

"USSR
ACADEMICIAN NESMEYANOV, PRESIDENT
USSR ACADEMY OF SCIENCES
MOSCOW

COUNCIL OF NATIONAL ACADEMY OF SCIENCES APPRECIATES INVITATION USSR ACADEMY OF SCIENCES TO SEND THREE SCIENTISTS TO YOUR SESSION ON PEACEFUL USES OF ATOMIC ENERGY IN MOSCOW ONE TO FIVE JULY 1955. SHORTNESS OF TIME AND PREOCCUPATION OF QUALIFIED INDIVIDUALS WITH PREPARATIONS FOR CONFERENCE ON SAME SUBJECT TO BE HELD IN GENEVA DURING AUGUST MAKES ACCEPTANCE IMPOSSIBLE. I AM CONFIDENT THAT GENEVA CONFERENCE WILL PROVIDE DESIRED OPPORTUNITY FOR EXCHANGE OF INFORMATION IN THIS FIELD.

BRONK
PRESIDENT NATIONAL ACADEMY
OF SCIENCES"

SEVENTH GENERAL ASSEMBLY INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS

The Seventh General Assembly of the International Council of Scientific Unions (ICSU) will be held at Oslo, Norway, August 9–12. Delegates from 38 member countries and eleven constituent scientific unions will be present. The following international scientific unions currently are members of ICSU: Astronomy, Biological Sciences, Pure and Applied Chemistry, Crystallography, Geodesy and Geophysics, Geography, History of Sciences, Mathematics, Theoretical and Applied Mechanics, Pure and Applied Physics, and Radio Science.

Items on the Agenda include: *1*) Applications for membership of the recently constituted international unions on Physiological Sciences, Biochemistry, and Scientific Psychology; *2*) a proposal to increase the annual dues of national members; *3*) a resolution submitted by the International Union of Biological Sciences urging the setting up of an international committee to study the biological hazards of large scale fission and thermonuclear experiments; *4*) a recommendation concerning the draft articles on the continental shelf prepared by the International Law Commission of the United Nations with reference to the freedom of scientific research at sea; and 5) a proposal put forward by the United States to appoint a special committee to plan a symposium on the organization of international science to be held at the time of the Eighth General Assembly of ICSU in 1958.

The United States will be represented by the following delegation chosen by the Academy–Research Council as the national adhering organization for the United States and appointed by the Secretary of State:

LLOYD V. BERKNER, Associated Universities, Inc., *Chairman*
DETLEV W. BRONK, National Academy of Sciences
ROBERT B. BRODE, University of California
WALTER H. BUCHER, Columbia University
J. J. NASSAU, Case Institute of Technology
PAUL WEISS, Rockefeller Institute for Medical Research
WALTER M. RUDOLPH, U. S. Department of State
C. E. SUNDERLIN, National Science Foundation
WALLACE W. ATWOOD, JR., Academy–Research Council

ANTARCTIC CONFERENCE

Twelve nations planning to maintain Antarctic stations during the International Geophysical Year (IGY), 1957–1958, participated in a special Antarctic Conference called by Georges R. Laclavere, Secretary General of the International Union of Geodesy and Geophysics, in Paris, July 6–10. Announcement of plans revealed that these nations will operate at least 42 stations on the continent and in sub-Antarctic waters. Twenty continental stations are now projected, including six by the United States.

During the Paris meeting five additional nations—Belgium, Chile, Japan, the Union of South Africa, and the USSR—joined the eight which had previously announced plans for IGY Antarctic stations; namely, Argentina, Australia, France, Great Britain, New Zealand, Norway, the United States, and West Germany. Japan and the Union of South Africa were unable to send delegates to Paris but communicated their interests to the Conference. West Germany sent an observer.

The United States accepted responsibility for handling a Weather Central in Antarctica. All stations and field parties will regularly radio their local weather conditions to the central facility at the Little America Station, where all reports will be consolidated and daily weather maps will be issued. Forecasts will be made for the individual areas, and predictions will be broadcast daily to the other stations.

An international committee, comprising one representative from each country, is determining the frequencies to be used for weather forecasts and other necessary radio communications. Predictions of the best usable radio frequencies six months or a year in advance will be made by Australian scientists while United States radio experts will make the short-term radio forecasts.

Stations planned by the United States include Little America near Kainan Bay, the Pole Station, the Byrd Station, two stations at Knox Coast and Vahsel Bay, and a logistics station at McMurdo Sound. Stations to be operated by other nations and not previously announced as part of the IGY are the Soviet stations, one on the

Knox Coast at 104° E. lat., another several hundred miles inland on the same meridian, and possibly a third some two or three hundred miles farther inland and to the west of the second; Argentina's station on the Weddell Sea at 78° S. lat., 37° W. long.; Chile's two stations on the Palmer Peninsula, two on the South Shetland Islands, and two in southern Chile; and the Belgian station on the Queen Mary Coast at 95° E. long. Japan plans a summer station the location of which is not yet definite.

The U. S. National Committee for the IGY was represented by the following delegation: Laurence M. Gould, *Chairman;* Hugh Odishaw, *Secretary;* A. H. Shapley; Harry Wexler; Rear Adm. George Dufek; Paul A. Siple; and J. Wallace Joyce.

DIVISION OF BIOLOGY AND AGRICULTURE

Leonard A. Maynard, Vice-Chairman of the Division of Biology and Agriculture from April 1953 to June 1955, became Chairman of the Division on July 1. Besides serving as Vice-Chairman, Dr. Maynard was also a member of the Agricultural Board and Chairman of the Food and Nutrition Board. In April 1954 he received the Osborne and Mendel Award for "his contributions as a teacher and an administrator and for his public services in furthering biochemical research and its applications." Dr. Maynard retired as Director of the School of Nutrition and Professor of Biochemistry at Cornell University on June 30.

Paul C. Mangelsdorf, Director of the Botanical Museum of Harvard University, succeeded Dr. Maynard as Vice-Chairman of the Division. Well known in the fields of economic botany and genetics, Dr. Mangelsdorf has been a member of the Committee on the Preservation of Indigenous Strains of Maize since 1951. In 1939 he published "The Origin of Indian Corn and Its Relatives" with R. G. Reeves as co-author. In 1941 he served as a member of the Advisory Committee of the Rockefeller Agricultural Commission in Mexico and from 1949–52 as agricultural consultant with the Rockefeller Foundation.

FOREIGN RESEARCH SCIENTISTS PROGRAM

Since the Foreign Operations Administration extended the program for Foreign Research Scientists from 150 awards to 185, 28 additional awards have been announced.

The following list indicates the country of origin of the recipients as well as the field and location of their research:

From Belgium

Renaat Loos, Biophysics—Oak Ridge Institute of Nuclear Studies, with Marshall Brucer.

From France

Jacques Blum, Physical chemistry—University of Rochester, with R. E. Marshak.

Jacques Despujols, Physics—Massachusetts Institute of Technology, with B. E. Warren.

Bernard Gastambide, Organic chemistry—University of Wisconsin, with William S. Johnson.

Louis Jauneau, Cosmic rays—Massachusetts Institute of Technology, with Bruno Rossi.

Georges Kulbicki, Petrography—University of Illinois, with Ralph E. Grim.

Ludwig van Rossum, Physics—University of California, with Robert W. Birge.

Frédéric Vester, Biochemistry—Yale University, with Arnold D. Welch.

From Germany

Hans Martin, Microbiology—University of Texas, with J. W. Foster.

Hans Möbest, Microbiology—Johns Hopkins University, with Thomas B. Turner.

Georg Rupprecht, Physics—University of Illinois, with Frederick Seitz.

Helmut Schmidt, Physics—University of Michigan, with J. M. Luttinger.

From Greece

Ulysses Davidis, Viticulture—University of California, with A. J. Winkler.

Paraskevi Strogyli, Dairy technology—Ohio State University, with I. A. Gould.

From Italy

Laura Laurencich, Paleontology—Louisiana State University, with Henry V. Howe.

Roberto Santamaria, Physical chemistry—The Mount Sinai Hospital, with Harry Sobotka.

Gian Volpi, Physical chemistry—Harvard University, with G. B. Kistiakowsky.

From the Netherlands

C. H. Paris, Physics—Massachusetts Institute of Technology, with W. W. Buechner.

From Norway

Per Halldal, Plant physiology—Carnegie Institution of Washington at Stanford, Calif., with C. S. French.

Jan Krogh-Moe, Physical chemistry—University of Missouri, with Newell S. Gingrich.

Jack Nordö, Meteorology—Massachusetts Institute of Technology, with H. G. Houghton.

From Turkey

Türkan Babadag, Physiological chemistry—Rutgers University, with R. L. Starkey.

Mehdi Dilege, Electrical Engineering—Carnegie Institute of Technology, with L. A. Finzi.

Ahmet Umar, Road Construction and Traffic Engineering—Purdue University, with K. B. Woods.

From the United Kingdom

Paul Butcher, Physics—Stanford University, with D. A. Watkins.

Derek Hoare, Biochemistry—University of Texas, with E. E. Snell.

John Derek Smith, Biochemistry—University of California, with W. M. Stanley.

Hugh Thurston, Abstract Algebra—Harvard University, with Richard Brauer.

PACIFIC ISLANDS RAT STUDY

The Pacific Science Board is sponsoring a long-range study of the biology and ecology of rats on Pacific Islands. Ponape, the third largest island in Micronesia, has been selected as a base for the initial 3-year period of field work. This tropical high island, with mountains rising 2,500 feet in height, has an area of about 130 square miles and a population close to 6,000 inhabitants. The District Administrator has offered housing as well as the facilities of the Agricultural Station for the field workers.

While rats of one or more species occur on practically all Pacific islands where they play a dominant and often disruptive part in the ecology of the biotic community, local studies of rat biology have thus far been few, of brief duration, and restricted in scope. The scientific literature indicates that no fundamental research on island rat populations has been carried out recently. The fact that rats constitute a hazard to the health of island peoples as well as being a principal agricultural pest is widely recognized and adds to the significance and urgency of carrying out this project.

The Principal Investigator of the project is Tracy I. Storer of the University of California at Davis, and the members of the initial field team will be J. T. Marshall, Jr., University of Arizona, and William B. Jackson, U. S. Public Health Service. It is planned that each member of the team will devote two years and an additional summer to work on the project. The following specialists are serving as project consultants:

John B. Calhoun, U. S. Public Health Service
David E. Davis, Johns Hopkins University
Robert K. Enders, Swarthmore College
F. R. Fosberg, U. S. Geological Survey
David H. Johnson, U. S. National Museum
Kenneth L. Knight, Department of the Navy, Bureau of Medicine and Surgery
Karl F. Meyer, University of California Medical Center
Robert Traub, Army Medical Center
Dwain Warner, University of Minnesota
Willard H. Wright, U. S. Public Health Service

Principal support for the study is being supplied by the National Science Foundation, the U. S. Public Health Service, the U. S. Office of Naval Research, and the Administration of the Trust Territory of the Pacific Islands.

DIVISION OF MATHEMATICS

Paul A. Smith, Chairman of the Section on Mathematics of the National Academy of Sciences and Professor of Mathematics at Columbia University, succeeded A. Adrian Albert as Chairman of the Division of Mathematics on July 1. Noted for his work in topology, metrical transitivity, topological groups, and the Lie groups, Dr. Smith received his Ph.D. in mathematics from Princeton University in 1925 and started teaching at Columbia University in 1927. At present he is a member of the U. S. National Committee for the International Mathematical Union and was formerly Chairman of the Division's Committee on Scientific Conferences.

At the annual meeting of the Division on May 21, the activities of the various committees were presented in the form of an annual report. New members of the division were appointed and two new societies, the Society for Industrial and Applied Mathematics and the Operations Research Society of America, were invited to name one representative each for a three-year period. A new Executive Committee was elected with the following membership: Paul A. Smith, *Chairman;* C. C. MacDuffee, University of Wisconsin; C. B. Morrey, University of California; Mina S. Rees, Hunter College; J. B. Rosser, Cornell University; and S. S. Wilks, Princeton University. Following the business session, Dr. Leon Cohen of the National Science Foundation spoke on the Mathematics Program of the Foundation.

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

The fourteenth International Congress of Pure and Applied Chemistry and the eighteenth Conference of the International Union of Pure and Applied Chemistry were held at Zurich, Switzerland, from July 20 to 28, 1955.

The Conference of the International Union included business meetings of the Council, which is composed of delegates from each of the 32 member countries, and scientific meetings of the sections, divisions, and commissions which compose the Union. The six sections of the Union, each including a number of divisions or commissions, are: Physical Chemistry, Inorganic Chemistry, Organic Chemistry, Biological Chemistry, Analytical Chemistry, and Applied Chemistry.

On July 28 and 29 two symposia were held, also at Zurich, on "Progress in the Organic Chemistry of Macromolecules" and "Development in the Techniques of High Polymers."

The United States was officially represented at the Conference by the following delegation appointed by the Secretary of State:

Frederick D. Rossini, Carnegie Institute of Technology, *Chairman*
Paul D. Bartlett, Harvard University
Wallace R. Brode, National Bureau of Standards
Herbert E. Carter, University of Illinois
Ralph A. Connor, Rohm & Haas Company
Arthur C. Cope, Massachusetts Institute of Technology

The following 43 representatives of the Academy–Research Council attended the International Congress:

Frederick D. Rossini, Carnegie Institute of Technology, *Chairman*
S. E. Q. Ashley, General Electric Company
Paul D. Bartlett, Harvard University
Wallace R. Brode, National Bureau of Standards
C. L. Brown, Standard Oil Development Company
Herbert C. Brown, Purdue University
Robert E. Burk, E. I. duPont de Nemours & Co., Inc.
Herbert E. Carter, University of Illinois
Ralph A. Connor, Rohm & Haas Company
Arthur C. Cope, Massachusetts Institute of Technology
Melvin Calvin, University of California, Berkeley
E. J. Crane, Ohio State University
Vincent du Vigneaud, Cornell University Medical College
Reynold C. Fuson, University of Illinois
Marshall D. Gates, University of Rochester
G. E. Hilbert, U. S. Department of Agriculture
Walter R. Kirner, National Science Foundation
Gordon M. Kline, National Bureau of Standards
I. M. Kolthoff, University of Minnesota
Wendell M. Latimer, University of California, Berkeley
Nelson J. Leonard, University of Illinois
J. Murray Luck, Stanford University
Randolph T. Major, Merck and Company, Inc.
Herman F. Mark, Polytechnic Institute of Brooklyn
Carl S. Marvel, University of Illinois
Orville E. May, Coca-Cola Company
Earl T. McBee, Purdue University
S. M. McElvain, University of Wisconsin
W. A. Mosher, University of Delaware
Melvin S. Newman, Ohio State University
Howard S. Nutting, Dow Chemical Company
Charles C. Price, University of Pennsylvania
Byron Riegel, G. D. Searle & Company
Ralph L. Shriner, State University of Iowa
Alexander Silverman, University of Pittsburgh
Foster D. Snell, Foster D. Snell, Inc.
Harold R. Snyder, University of Illinois
William J. Sparks, Standard Oil Development Company
Edward Wichers, National Bureau of Standards
Saul Winstein, University of California, Los Angeles
Robert B. Woodward, Harvard University
T. F. Young, University of Chicago
Walter J. Murphy, American Chemical Society

INTERNATIONAL CONGRESS OF REFRIGERATION

The Ninth International Congress of Refrigeration will be held at Paris from August 30 to September 7. The program will include plenary meetings, as well as working sessions of the nine Commissions which compose the International Institute of Refrigeration, and visits to a number of refrigeration plants and other installations.

Richard C. Jordan, University of Minnesota Institute of Technology, and Burgess Jennings, Northwestern University Institute of Technology, will represent the Academy–Research Council at this Congress.

VISIT OF SPANISH MANAGEMENT EXECUTIVES

A team of 16 industrial management executives from Spain who are studying American management methods under sponsorship of the Foreign Operations Administration were guests of the Academy–Research Council on June 1 as part of a two-week visit in Washington.

The visitors were welcomed by S. Douglas Cornell, Executive Officer of the Academy. Following a review of the organizational structure of the Academy–Research Council, the team heard descriptions of several means by which the Academy–Research Council provides assistance in the management of technical programs, including a discussion of the operations of the Advisory Committee on International Technologic Assistance. Finally there was a presentation of the programs of the Academy–Research Council in promoting international cooperation in science.

Among those invited to the Academy to meet the management team were representatives of the Spanish Embassy, the U. S. Department of State, the Foreign Operations Administration, the U. S. Department of Defense, and the National Science Foundation.

INTERNATIONAL ASTRONOMICAL UNION

The Ninth General Assembly of the International Astronomical Union (IAU) will be held at Dublin, Ireland, August 29–September 5. The Assembly will include business sessions as well as scientific meetings of the 38 standing committees which compose the Union.

A symposium on Radio Astronomy is scheduled to take place at Jodrell Bank, Manchester, on August 25–27, and two other symposia, one on non-stable stars and the other on large-scale structure of galaxies, will be held at Dublin.

The United States will be officially represented at the General Assembly by the following delegation appointed by the Secretary of State:

Jason J. Nassau, Warner and Swasey Observatory, *Chairman*
Ira S. Bowen, Mt. Wilson and Mt. Palomar Observatories
Gerald M. Clemence, U. S. Naval Observatory
Gerard P. Kuiper, Yerkes Observatory
Robert R. McMath, McMath Hulbert Observatory
Otto Struve, University of California at Berkeley
Fred L. Whipple, Harvard College Observatory
Albert E. Whitford, Washburn Observatory

The following astronomers, in addition to the eight listed above, will attend the Assembly as delegates of the Academy–Research Council:

Harold L. Alden, Leander McCormick Observatory
Walter Baade, Mt. Wilson & Mt. Palomar Observatories
Adriaan Blaauw, Yerkes Observatory
Bart J. Bok, Harvard College Observatory
Dirk Brouwer, Yale University Observatory
Charles R. Burrows, Cornell University
Helen W. Dodson, McMath Hulbert Observatory
Leo Goldberg, University of Michigan Observatory
Jessie L. Greenstein, California Institute of Technology
John P. Hagen, Naval Research Laboratories
George H. Herbig, Lick Observatory
William A. Hiltner, Yerkes Observatory
Charles M. Huffer, Washburn Observatory
Arthur E. Lilley, Naval Research Laboratory
Nicholas U. Mayall, Lick Observatory
Aden B. Meinel, Yerkes Observatory
Donald H. Menzel, Harvard College Observatory
R. Minkowski, Mt. Wilson & Mt. Palomar Observatories
William W. Morgan, Yerkes Observatory
Walter O. Roberts, High Altitude Observatory
Martin Schwarzschild, Princeton University Observatory
Harlow Shapley, Harvard College Observatory
Paul Sollenberger, Miami, Florida
Lyman Spitzer, Jr., Princeton University Observatory
Bengt Strömgren, Yerkes Observatory
Richard N. Thomas, Harvard College Observatory
Peter van de Kamp, Sproul Observatory
Merle F. Walker, Lowell Observatory
Chester B. Watts, U. S. Naval Observatory

SECTION ON EPIDEMIOLOGY OF CANCER

The Division of Medical Sciences has established a Section on Epidemiology of Cancer as a new unit within the organization of the Committee on Growth. The chairman of the Section is Michael B. Shimkin, Chief of the Biometry and Epidemiology Branch of the National Cancer Institute. The Section will cooperate closely with the Committee on Cancer Diagnosis and Therapy and the Follow-up Unit of the Division.

This Section has been established in response to a growing appreciation of the lack of systematized knowledge of the natural history of the disease and of the natural course of many types of cancer in man. The epidemiological approach will not solve the problem of the nature of malignant growth, but may provide valuable clues as to the environmental and constitutional factors that may be involved which

will guide the work in the laboratory and in the clinics. Growing concern about the etiological importance of environmental factors such as tobacco smoke, smog, and industrial chemicals is focusing attention on the epidemiological approach, which is hampered by the dearth of information on incidence and prevalence of cancer in various populations.

The Committee on Growth is interested in encouraging activity in this field and invites inquiries about obtaining research support.

CONGRESS ON ANALYTICAL CHEMISTRY

I. M. Kolthoff, President of the Analytical Section of the International Union of Pure and Applied Chemistry, has announced that the Congress on Analytical Chemistry will be held in Lisbon, September 9–16, 1956, under the patronage of the Union. Professor D. Antonio Pereira Forjaz has been appointed President of the organizing committee and Professor Pierre A. Laurent is in charge of arrangements. The Congress program will cover broadly all aspects of analytical chemistry. All inquiries regarding plans for the meeting should be addressed to Professor Pierre A. Laurent, Instituto Superior Tecnico, Avenida Rovisco Pais, Lisbon, Portugal.

COMMITTEE ON A NATIONAL ATLAS

The Committee on a National Atlas of the United States has just issued a report embodying its recommendations. The report sets forth a plan to build up a loose-leaf national atlas of economic, physical, and cultural information, by standardizing sheet size and certain other features of maps that otherwise would be issued by Federal agencies in different sizes and formats.

Except for the standard size of sheet, the recommended specifications are made so as to allow considerable latitude in the design of individual maps in view of the diversity of subject matter that may be presented. The U. S. Weather Bureau is using the recommended standards in a new series of climatic maps and the first of these has already been issued.

INTERNATIONAL INSTITUTE OF STATISTICS

William G. Cochran, School of Hygiene and Public Health, Johns Hopkins University and President of the Biometric Society, represented the Academy–Research Council at the 29th session of the International Institute of Statistics, which was held at Petropolis near Rio de Janeiro, Brazil, from June 24 to July 2.

CONFERENCE ON MASS FIRES

The Academy–Research Council sponsored an exploratory conference on mass fires on May 24 with the objective of coordinating research on mass fires. Representatives of the Federal Government, fire associations, universities, and the Academy–Research Council attended. Hoyt Hottel, Director of the Fuels Research Laboratory of Massachusetts Institute of Technology, acted as chairman. An effort was made to describe and define mass fires and fire storms. The fire problems created by atomic and hydrogen bombs were considered, and mass fires in peacetime and wartime in rural, urban, and military areas were discussed. It was revealed that there has been very little fundamental research attempted about mass fires. A theory of mechanisms for the development of mass fires, divided into a combustion phase and a weather condition phase, was also discussed.

The conference closed with consideration of the feasibility of a research program for the study of mass fires. All present agreed that the problem of fire in peace and war is a tremendous one, that a basic research program on the nature of combustion and inhibition of the combustion process should be undertaken, and that a study should be made of the known laws of nature which operate during the spreading of fire. In particular the Federal Civil Defense Administration, the U. S. Forest Service, and the U. S. Department of Defense are in great need of and are seeking guidance in the development of a fire research program. It is anticipated that this exploratory conference may lead to an active program of fire research within the Academy–Research Council organization.

FIFTIETH ANNIVERSARY THEORY OF RELATIVITY

Hermann Weyl, Professor of Mathematics at the Institute for Advanced Study at Princeton and long-time colleague and friend of the late Albert Einstein, represented the National Academy of Sciences at the celebration of the Fiftieth Anniversary of the Theory of Relativity at Bern, Switzerland, July 16. A special colloquium on the Theory of Relativity was held at the University of Bern, July 11–16.

ANNUAL MEETING DIVISION OF ENGINEERING AND INDUSTRIAL RESEARCH

The annual meeting of the Division of Engineering and Industrial Research was held on Friday, May 6, at the Academy–Research Council. The program was a departure from those of earlier years in which a full report was made by all the units. At this meeting the Chairman of the Division, Clifford F. Rassweiler, presented a brief report on the activities of the majority of the Division units and then introduced the speakers who gave rather detailed accounts of the other activities. The speakers and their subjects are as follows:

"The Evolution and Present Status of Artificial Limbs Research," by Paul B. Magnuson, formerly Chief Medical Director of the U. S. Veterans Administration, and A. Bennett Wilson, Jr., Executive Secretary of the Advisory Committee on Artificial Limbs.

"The Initial Year of NRC Research on Cargo Handling," by Rear Adm. E. G. Fullinwider, Director, and Col. R. A. Cliffe, Transportation Specialist, Maritime Cargo Transportation Conference.

"A Study of Optimum Utilization of Strategic Minerals by Linear Programming Techniques," by John R. Townsend, Chairman of the Materials Advisory Board.

"Long Range Planning for the Professional Engineering Societies of the U.S.A.," by E. H. Rose, staff member of the Materials Advisory Board.

"Highway Construction for Modern Heavy Truck Traffic and the Highway Research Board Approach to the Studies on Urbanization," by Fred Burggraf, Director of the Highway Research Board.

INTERNATIONAL CONGRESS OF BIOCHEMISTRY

The Third International Congress of Biochemistry, organized by the Belgian Society of Biochemistry under the auspices of the International Union of Biochemistry, will convene in Brussels, Belgium, August 1–6. The Congress will include symposia, communications by members, and general lectures. There will be thirty-two symposial sessions devoted to the presentation by invited speakers of reviews upon topical subjects. Two general lectures will be given at the opening and closing session of the Congress: "Thyroxin und Oxydative Phosphorylierung," by Professor Carl Martius of the Physico-Chemical Institute of the University of Wurzburg, Germany; and on the "Hormones of the Posterior Pituitary," by Professor Vincent du Vigneaud of Cornell University Medical College.

The following scientists will represent the Academy–Research Council at the Biochemistry Congress:

George B. Brown, Sloan-Kettering Institute for Cancer Research
Philip P. Cohen, University of Wisconsin
Carl Cori, Washington University
Vincent du Vigneaud, Cornell University Medical College
Philip Handler, Duke University
J. Murray Luck, Stanford University
Hans Neurath, University of Washington
Wendell Stanley, University of California

RETIREMENT OF ACADEMY–RESEARCH COUNCIL LIBRARIAN

The Academy–Research Council announces with regret the retirement of Miss Callie Hull as Librarian on June 30 after 35 years of service. Miss Hull came to the National Research Council in 1920 as Reference Librarian for its Research Information Service. In 1936, she became Librarian of the National Research Council and in 1948 Librarian of the combined libraries of the Academy–Research Council.

During her years of service Miss Hull compiled a number of reference works that have become standard. However, she is probably best known to librarians throughout the world as the compiler of several editions of two of the most important reference books published by the Academy–Research Council, "Industrial Research

Laboratories of the United States" and the "Handbook of Scientific and Technical Societies of the United States and Canada." The sixth edition of the Handbook was published just prior to her retirement.

On June 23, the President of the National Academy of Sciences gave a reception in the Auditorium in honor of Miss Hull, and the members and staff of the Academy–Research Council took that opportunity to express their appreciation of her many services. Miss Hull is planning to return to Atlanta, Ga., where she hopes to devote some of her time to indexing, which she thoroughly enjoys.

AMERICAN GEOLOGICAL INSTITUTE

The American Geological Institute announces the appointment of Robert Charles Stephenson as Executive Director of the Institute to succeed Charles B. Hunt, who is returning to the Denver office of the U. S. Geological Survey to do research work. Dr. Stephenson received his Ph.D. in geology from Johns Hopkins in 1943 and since then has been interested primarily in mining geology. From 1946–52 he was Assistant State Geologist of Pennsylvania and is currently employed by Woodward and Dickerson, Inc., in Philadelphia.

The July 1955 issue of the *Geological Newsletter* (Vol. VII, No. 1) marks the seventh year of the paper and the second year of widespread distribution. Started in September 1949 by David M. Delo, then Executive Director of the Institute, as a medium for keeping geologists informed about the problems for which the Institute was created, the publication has expanded from a mimeographed sheet issued 9 times a year to a monthly paper mailed to almost 15,000 geologists and geophysicists.

STAFF APPOINTMENTS

Helen M. Scoville, pathologist of the Pittsfield General Hospital, has been appointed Professional Associate with the Subcommittee on Oncology by the Division of Medical Sciences effective August 1. She will serve as head of the editorial office for the Atlas of Tumor Pathology, replacing **Mary Ruth Oldt.** Dr. Oldt's resignation, which will take effect at the end of August, is occasioned by her husband's appointment to the Foreign Service.

Monroe H. Martin has been appointed Executive Secretary of the Division of Mathematics effective July 1, succeeding **James A. Clarkson.** Dr. Martin received his Ph.D. degree in Mathematics from Johns Hopkins University in 1932 and began teaching at Maryland University in 1936. At present he is Director of the Institute for Fluid Dynamics and Applied Mathematics at Maryland University. He is the representative of the American Mathematical Society on the U. S. National Committee for the International Union of Theoretical and Applied Mechanics, and has served on the Committee on Mathematics Advisory to the Committee on International Exchange of Persons. Dr. Martin's special interests are partial differential equations, with special attention to problems arising in flow of compressible fluids, and existence and uniqueness theorems for partial differential equations.

The Division of Earth Sciences announces the appointment of **William R. Thurston** as Executive Secretary of the Division to succeed **William E. Benson** who is leaving to become Chief Geologist of the Manidon Mining Corporation in North Dakota. Dr. Thurston received his Ph.D. in geology from Columbia University in 1952 and for the past year was associate professor of geology in the School of Engineering at Louisiana Polytechnic Institute.

John Hawkins Gribbin has been appointed Librarian for the Academy–Research Council, succeeding **Miss Callie Hull** (*see* p. 67) who retired on June 30. Mr. Gribbin studied library science at the University of California and is now a candidate for the Ph.D. degree in the Graduate Library School of the University of Chicago. Mr. Gribbin was formerly Associate Librarian for Rice Institute in Houston, Tex.

The Committee on Atomic Casualties announces the appointment of **Isolde E. Loewinger** as pediatrician with the Atomic Bomb Casualty Commission in Japan. Before her appointment Dr. Loewinger was a pediatrician in the Department of the Army, serving the Sixth Army Dispensary, Presidio San Francisco, Calif.

NATIONAL HEMOGLOBIN STANDARD FIELD TRIAL

Last year the Division of Medical Sciences, at the request of the Hematology Study Section of the National Institutes of Health, established an ad hoc panel under the Committee on Blood and Related Problems to recommend national standards for the conduct and calibration of hemoglobin determinations (*see* NEWS REPORT, Vol. IV, p. 84). George E. Cartwright of Salt Lake City was appointed chairman. The panel has sought the cooperation of the College of American Pathologists, the American Society of Clinical Pathologists, the American Association of Blood Banks, the U. S. Department of Defense, the U. S. Veterans Administration, the National Institutes of Health, and the National Bureau of Standards, and has maintained close liaison with the Medical Research Council of the United Kingdom and the National Research Council of Canada.

After careful investigation, the panel has agreed upon a cyanmethemoglobin standard and method developed by David L. Drabkin of the University of Pennsylvania. To gain experience in their use, it is now launching a one-year field trial, to be carried out in a uniform manner by a number of civilian and military laboratories. The cooperating laboratories will conduct and report measurements of the three standard solutions in their own photometers at 3-month intervals, complete a simple questionnaire designed to furnish information on the influence of various factors on the results of the hemoglobin determination, and report their analyses of two unknown solutions, one of cyanmethemoglobin and one of blood. They will also be given the procedure for calibrating such other methods as they may wish to employ by means of the cyanmethemoglobin standard.

Laboratories wishing to cooperate in this trial and willing to abide by the above terms are invited to apply to the appropriate distribution centers, which are being furnished sets of the standard solutions and detailed instruction for their use. The centers are as follows: for civilian laboratories, the College of American Pathologists, 203 North Wabash Avenue, Chicago, Ill.; for military and Government laboratories, the Army Medical Service Graduate School, the Navy Bureau of Medicine and Surgery, the Air Force Surgeon General's Office, and the U. S. Veterans Administration; and for laboratories in Canada, the Division on Medical Research, National Research Council, Ottawa, Ont. Since the number of sets available is limited, those interested are urged to apply promptly.

AVAILABILITY OF RHESUS MONKEYS

Because of the embargo on the shipment of rhesus monkeys imposed by the Indian Government in March of this year, the Institute of Animal Resources of the Academy–Research Council was requested by the U. S. Department of Defense to survey all commercial importers to determine the number of monkeys available for research purposes. The results of this survey indicated that fewer than twenty were available.

On June 7 the Institute of Animal Resources sponsored a Conference on the Procurement and Production of Rhesus Monkeys. Approximately thirty representatives from university research departments, pharmaceutical houses, the National Foundation for Infantile Paralysis, Government agencies, and the Academy–Research Council attended. As a result of this meeting a committee was established as a part of the Institute to investigate the feasibility of raising rhesus monkeys in the Western Hemisphere.

In the meantime, the Government of India has agreed to permit the importation of a limited number of monkeys needed for medical research and vaccine production in the United States. Legitimate users must receive from the National Institutes of Health a certificate attesting to the purposes of their work and the number of animals needed before attempting to buy monkeys in India. Special forms to be used in applying for certification may be obtained from the National Institutes of Health, Room 1012, Building T–6, Bethesda 14, Md.

RETIREMENT OF WALTER HARTMAN

On June 30, Walter E. Hartman, retired as Maintenance Supervisor of Buildings and Grounds after working for the National

Academy of Sciences for 30 years. Mr. Hartman was a trained nurseryman and worked for a commercial firm in Virginia before joining the Academy staff in 1925. At that time the grounds had just been landscaped, the building was new, and the rooms on the main floor were filled with exhibits. The Academy was a showplace and Mr. Hartman took great pride in its beauty. As the years passed and the building was put to more varied uses, he became steam-fitter, plumber, electrician, engineer, and friend to all.

However, the grounds remained his special domain. At first he did all the work himself, mowing the grass, pruning the shrubbery, replanting where necessary. He liked nothing better than satisfying the botanically curious by reciting the names, both popular and scientific, of the flowering trees and shrubs. When, in the course of time, part of the grounds had to be given over to a parking lot, that too became his province. He enjoyed greeting everyone as they drove in and was always there regardless of the weather. His kindliness and helpfulness, coupled with his willingness to do whatever he was asked, made him popular with everyone.

On June 23, the President of the National Academy of Sciences gave a reception in his honor in the Auditorium. The Hamilton watch presented to him by Dr. Bronk was appropriately inscribed "From your friends, National Academy of Sciences –National Research Council, 1925–1955."

FELLOWSHIP PROGRAMS

GRANTS FOR SCHOLARS IN CANCER RESEARCH

The American Cancer Society, upon recommendation of the Committee on Growth, has awarded six new scholar grants and four renewals as part of its research program. The purpose of these grants ($6,000 annually) is to assist institutions to support promising young scientists while they are becoming established as independent investigators. The following scholars have been appointed to work at the institutions indicated:

William S. Blakemore (M.D., University of Pennsylvania School of Medicine, 1945; Ph.D., George Washington University, 1947)
Department of Surgery, University of Pennsylvania (renewal for two years)

Harris Busch (M.D., University of Illinois, 1946; Ph.D., University of Wisconsin, 1952)
Department of Medicine and Biochemistry, Yale University

Leonard D. Hamilton (D.M., Balliol College, Oxford, England, 1951; Ph.D., Trinity College, Cambridge, England, 1952)
Department of Medicine, Memorial Center, Sloan-Kettering Institute for Cancer Research, New York City

Shinya Inoué (Ph.D., Princeton University, 1951)
Department of Biology, University of Rochester

John M. Marshall, Jr. (M.D., University of Illinois, 1950; Ph.D., University of Illinois, 1954)
Department of Anatomy, University of Pennsylvania

Charles A. Nichol (Ph.D., University of Wisconsin, 1949)
Department of Pharmacology, Yale University (renewal for two years)

Eric Reiss (M.D., Medical College of Virginia, 1948) Department of Medicine, Washington University

Harry Rudney (Ph.D., Western Reserve University, 1952) Department of Biochemistry, Western Reserve University

Martin Sonenberg (M.D., New York University College of Medicine, 1944; Ph.D., New York University College of Medicine, 1952)
Division of Clinical Investigation, Memorial Center, Sloan-Kettering Institute for Cancer Research, New York City (renewal for two years)

H. Guy Williams-Ashman (Ph.D., University of London, 1949)
Department of Biochemistry, Ben May Laboratory for Cancer Research, University of Chicago (renewal for two years).

GRANTS IN CANCER RESEARCH

Acting for the American Cancer Society, the Committee on Growth is accepting applications for grants-in-aid for cancer research in the United States. Applications received before October 1 will be considered during the winter and grants recommended will become effective on July 1, 1956.

Because the Committee feels that an understanding of cancer depends upon a deeper insight into the nature of the growth process, normal and malignant, the

scope of the research program is broad and includes, in addition to clinical investigations on cancer, fundamental studies in the fields of cellular-physiology, morphogenesis, genetics, virology, biochemistry, metabolism, nutrition, cytochemistry, physics, radiobiology, chemotherapy, endocrinology, and carcinogenesis. The Committee is particularly interested in encouraging research in the epidemiology of cancer.

Application blanks may be obtained from the Executive Secretary, Committee on Growth, National Academy of Sciences–National Research Council, 2101 Constitution Avenue, N. W., Washington 25, D. C.

AWARD OF FELLOWSHIPS IN CANCER RESEARCH

The American Cancer Society, upon recommendation of the Committee on Growth of the Division of Medical Sciences, has awarded fifty-seven fellowships in cancer research for the academic year 1955–56. Three of these are British American Exchange Fellowships, and one a Lillian Israel Memorial Fellowship. The recipients of the fellowships will study in twenty-four institutions in the United States, and in nine foreign laboratories.

The following list indicates the institution from which the appointees received the doctorate, as well as the nature and location of their fellowship research.

American Cancer Society Fellowships in Cancer Research

Alan C. Aisenberg (M.D., Harvard Medical School, 1950)
Acetate activation—University of Wisconsin, with Van Rensselaer Potter.

Elizabeth P. Anderson (Ph.D., Stanford University, 1951)
Biochemistry: the enzymology of pyrimidine and purine nucleotides—National Institutes of Health, with Herman M. Kalckar and Bernard L. Horecker.

Irwin Berman (Ph.D., Candidate, New York University, 1955)
Effects of ionizing radiation combined with endocrine alterations on the phosphorous metabolism and morphology of bone marrow—Brookhaven National Laboratory, with R. J. Klein.

Clark Bublitz (Ph.D., Candidate, University of Chicago, 1955)
Synthesis and degradation of fat—University of Munich, Germany, with F. Lynen.

Mary Carsten (Ph.D., New York University, 1951)
The purification of certain proteins of small enough size to permit structural studies—University of California at Los Angeles, with Wendell H. Griffith and John J. Pierce.

LaRoy N. Castor, Jr. (Ph.D., University of Pennsylvania, 1954)
Application of biophysical techniques to cells grown in tissue culture—University of Pennsylvania, with Britton Chance.

Jackson J. Clemmons (Ph.D., Candidate, University of Wisconsin, 1955)
Quantitative cytology and cytopathology: reaction of cells to biological, chemical, and physical agents—Western Reserve University, with Cecilie Leuchtenberger.

Kelly H. Clifton (Ph.D., Candidate, University of Wisconsin, 1955)
Comparative physiological and biochemical studies of experimental pituitary tumors—Children's Cancer Research Foundation, Boston, with Jacob Furth.

Richard J. Doisy (Ph.D., Syracuse University, 1954)
The comparison of the muscular efficiency in the normal, hypothyroid and hyperthyroid rat—University of Wisconsin, with Henry A. Lardy.

James T. Dowling (M.D., Harvard Medical School, 1952)
In vitro kinetics of amino acid incorporation into thyroglobulin—Thorndike Memorial Laboratory, Boston, with William B. Castle and Sidney H. Ingbar.

Richard M. Franklin (Ph.D., Yale University, 1954)
(1) The transformation of the fibroma virus to the myxoma virus; (2) The growth characteristics of the virus of vesicular stomatitis—California Institute of Technology, with Renato Dulbecco.

Edward Glassman (Ph.D., Candidate, Johns Hopkins University, 1955)
Genetical control of tryptophane metabolism in *Drosophila melanogaster*—California Institute of Technology, with H. K. Mitchell.

Murray Goodman (Ph.D., University of California at Berkeley, 1952)
Studies in the synthesis of polynucleotides and polypeptides—Cambridge University, England, with A. R. Todd.

Donald P. Groth (Ph.D., University of Wisconsin, 1954)
A continuation in the use of biochemical methods in the study of growth, differentiation, and embryology—University of California at Berkeley, with Daniel Mazia.

Leonard A. Herzenberg (Ph.D., Candidate, California Institute of Technology, 1955)
Studies on the first step(s) of induction of synthesis of β-galactosidase in *E. coli*—Institut Pasteur, Paris, France, with Jacques Monod.

Jerard Hurwitz (Ph.D., Western Reserve University, 1953)
Pentose phosphate pathway of metabolism—National Institutes of Health, with Bernard L. Horecker.

David P. Jacobus (M.D., University of Pennsylvania, 1953)
Boron compounds for cancer therapy—University of Pennsylvania, with Dale R. Coman.

Burke H. Judd (Ph.D., California Institute of Technology, 1954)
The role of heterochromatic rearrangements as modifiers of variegated-type position effect in *Drosophila melanogaster*—University of Texas, with Wilson S. Stone.

Armin D. Kaiser (Ph.D., California Institute of Technology, 1954)
A genetic analysis of lysogenic bacteria for two related bacteriophages—Institut Pasteur, Paris, France, with André Lwoff and François Jacob.

Jane C. Kaltenbach (Ph.D., State University of Iowa, 1950)
Antigens during embryonic development—Wenner-Grens Institut, Stockholm, Sweden, with John Runnström.

Milton Kern (Ph.D., Yale University, 1954)
Effect of guanosine triphosphate on glucose and mannose metabolism—Johns Hopkins University, with Sidney P. Colowick.

Ruth Kimmelstiel (M.D., Duke University, 1951)
The effect of anoxia on the intermediary metabolism of newborn rats—Cambridge University, England, with F. G. Young.

Joseph Kraut (Ph.D., California Institute of Technology, 1953)
X-ray diffraction study of the structure of crystalline proteins—Cambridge University, England, with John C. Kendrew.

Seymour Lederberg (Ph.D., Candidate, University of Illinois, 1955)
Chemical structure of chromosomal material—University of California at Berkeley, with Daniel Mazia.

Israel R. Lehman (Sc.D., Johns Hopkins University, 1954)
Enzymatic studies of the nature of hydroxymethylcytosine synthesis—Washington University School of Medicine, with Arthur Kornberg.

Isaac Lewin (M.D., University of Pennsylvania, 1950)
(1) Continuation of effect of steroid hormones on xanthine oxidase in normal and neoplastic tissues; (2) Effect of purine administration on xanthine oxidase activity in normal and neoplastic tissues—Chester Beatty Research Institute, London, England, with Alexander Haddow.

Donald J. McCorquodale (Ph.D., Candidate, University of Wisconsin, 1955)
The mechanism of estrogen action on protein synthesis both *in vivo* and *in vitro*—University of Wisconsin Medical School, with Gerald C. Mueller.

Harold T. Meryman (M.D., Long Island Medical School, 1946)
Biophysics of protein and virus—Yale University, with Ernest Pollard.

Robert L. Metzenberg, Jr. (Ph.D., Candidate, California Institute of Technology, 1955)
Transamination by neurospora crassa: the use of mutants lacking a single transaminating enzyme—University of Wisconsin, with Philip P. Cohen.

Joseph F. Migliarese (Ph.D., Rutgers University, 1954)
Tumor-host relations—University of Kansas School of Medicine, with R. E. Stowell and C. G. Bly.

Matthew W. Noall (Ph.D., University of Utah, 1952)
Mode of production of endocrine influences upon nitrogen metabolism—University of Michigan, with Halvor N. Christensen.

Carl R. Partanen (Ph.D., Harvard University, 1954)
Comparative quantitative cytochemical studies on organized and unorganized plant growth *in vitro*—Harvard University, with Ralph H. Wetmore.

Richard A. Peabody (Ph.D., Candidate, Western Reserve University, 1955)
A study of the mechanisms of oxidative phosphorylation—Johns Hopkins University School of Medicine, with Albert L. Lehninger.

Richard M. Peck (Ph.D., University of Maryland, 1947)
Synthesis of N-aryl nitrogen mustards for growth-inhibition and carcinogenicity testing—Royal Cancer Hospital, London, England, with Alexander Haddow.

John H. Phillips, Jr. (Ph.D., Candidate, University of California at Berkeley, 1955)
Immune mechanisms of invertebrates—Hopkins Marine Station, Pacific Grove, Calif., with Donald P. Abbott.

Bernard Pirofsky (M.D., New York University, 1950)
An investigation into the cytochemistry and physiology of leukemic and lymphoma cells grown *in vitro*—University of Oregon Medical School, with Edwin E. Osgood.

Henry C. Pitot (M.D., Candidate, Tulane University School of Medicine, 1955)
Metabolism of one-carbon units and protein synthesis during tumor induction—Tulane University, with Emmanuel Farber.

Alfred M. Prince (M.D., Candidate, Western Reserve University School of Medicine, 1955)
Quantitative studies on cell virus interrelationships with Rous sarcoma viruses *in vitro*—Yale University School of Medicine, with F. Duran-Reynals.

Vernon W. Proctor (Ph.D., Candidate, University of Missouri, 1955)
Fresh-water algal antibiosis and its effect in natural bodies of water—Yale University, with G. Evelyn Hutchinson.

Margery P. F. Marsden Ray (Ph.D., Harvard University, 1954)
The use of *in vitro* techniques as a tool in studying normal and abnormal growth in vascular plants—Harvard University, with Ralph H. Wetmore.

Howard V. Rickenberg (Ph.D., Yale University, 1954)
Induced formation of enzymes—Institut Pasteur, Paris, France, with Jacques Monod.

Willard D. Roth (Ph.D., Candidate, Harvard University, 1955)
A study of the lamprey endocrine system with special reference to the pituitary—Harvard Medical School, with George B. Wislocki.

Kenneth J. Ryan (M.D., Harvard Medical School, 1952)
Intermediary metabolism of the neutral steroids—Huntington Memorial Hospital, Medical Laboratories, Massachusetts General Hospital, Boston, with Lewis L. Engel.

James E. Smith (Ph.D., Purdue University, 1955)
The molecular architecture of the cell walls of *Penicillium chrysogenum* Q176—Purdue University, with Henry Koffler.

Walter James Sullivan (M.D., Cornell University Medical College, 1951)
Relationship between conduction of action potentials and metabolic activity in peripheral nerve—Rockefeller Institute for Medical Research, New York, with Detlev W. Bronk and Frank Brink.

Irwin Tessman (Ph.D., Yale University, 1954)
Virus and enzyme studies with very soft X-rays. The delayed expression of virus mutations—Cornell University, Ithaca, with Philip Morrison.

Katharine Tryon (Ph.D., University of Michigan, 1953)
Physiological comparisons of differentiating and non-differentiating tobacco root tumor tissue *in vitro*—University of Wisconsin, with Folke Skoog.

Earl Usdin (Ph.D., Ohio State University, 1951)
Folic acid-like substances present in natural products—Royal Institute of Technology, Stockholm, Sweden, with L. Ericson.

Donald F. H. Wallach (M.D., Harvard Medical School, 1953)
Mechanisms of invasiveness in malignant tumors—Harvard Medical School, with Jacob Furth.

Morton M. Weber (Sc.D., Johns Hopkins University, 1953)
Mechanism of action of flavoprotein enzyme systems from *Clostridium kluyveri* and animal tissues Johns Hopkins University, with Nathan O. Kaplan.

John E. Whitney (Ph.D., University of California at Berkeley, 1951)
The influence of pituitary hormones on growth and metabolism—Cambridge University, England, with F. G. Young.

James W. Woods (Ph.D., Johns Hopkins University, 1954)
Central nervous control of anterior hypophysial secretion—Maudsley Hospital, London, England, with G. W. Harris.

David A. Yphantis (Ph.D., Candidate, Massachusetts Institute of Technology, 1955)
The role of non-polar residues in determining the properties and interactions of proteins. The application of the separation cell to this and other problems—Massachusetts Institute of Technology, with David F. Waugh.

Lillian Israel Memorial Fellowship in Cancer Research

Lowell M. Greenbaum (Ph.D., Tufts College, 1953)
The purification of cathepsin B—Yale University, with Joseph S. Fruton.

British American Exchange Fellowships in Cancer Research

Robert L. Berger (Ph.D., Candidate, Pennsylvania State University, 1955)
Enzyme mechanisms—Cambridge University, England, with F. J. W. Roughton.

Mortimer L. Mendelsohn (M.D., Harvard Medical School, 1948)
Effects of ionizing radiations on the kidney slice PAH transport mechanism—Cambridge University, England, with Joseph S. Mitchell.

Peter T. Mora (Ph.D., University of Budapest, Hungary, 1948)
Study of the correlation of size, shape, chemical constitution and immunological activity of mucopolysaccharides in cancer—Oxford University, England, with H. A. Krebs and Paul W. Kent.

NATIONAL SCIENCE FOUNDATION SECOND 1955 POSTDOCTORAL AWARDS

The National Science Foundation has recently announced a second 1955–1956 postdoctoral program for a limited number of fellowships to be awarded in October 1955. As in the past the Fellowship Office of the Academy–Research Council is cooperating with the Foundation by receiving and evaluating through its panels of scientists the applications for these fellowships.

These awards will be available to persons who are planning to enter upon or continue postdoctoral studies in the basic and applied natural sciences. These include mathematics; the physical, medical, biological, and earth sciences; engineering; anthropology; and psychology (excluding clinical psychology).

The fellowships are open to citizens of the United States who have a Ph. D. in one of the fields listed above, or the equivalent in training and experience. They are available also to holders of the M.D., D.D.S., or D.V.M. degrees.

Applications must be received in the Fellowship Office by September 12, 1955. Application materials may be obtained from the Fellowship Office, National Academy of Sciences–National Research Council, Washington 25, D. C.

RECORD OF MEETINGS

May	
1	Committee on International Participation in the International Union of Geodesy and Geophysics
	American Geophysical Union, Executive Committee
2	USA National Committee, International Scientific Radio Union
2–4	American Geophysical Union
2–6	Review Committee on WASHO Road Test, *San Francisco*
3	Sub-panel on Mica, *New York City*
3–4	Subcommittee on Sheep Nutrition, *Chicago*
4	Subcommittee on Applied Biology and Technician Training, *East Lansing, Mich.*
	Committee on Mechanical Engineering, Special Subcommittee to Review a New Concept for Transportation and Handling Bulk Fuel, *Natick, Mass.*
5	Committee for Research in Problems of Sex
	Panel on Guided Missiles
	Division of Biology and Agriculture, Subcommittee on Graduate and Professional Education, *St. Louis, Mo.*
	Subcommittee on Nuclear Geophysics
6	Division of Engineering and Industrial Research, Annual Meeting
	Division of Anthropology and Psychology, Annual Meeting
	Subcommittee on Toxicology, *Nashville, Tenn.*
	Ad hoc Committee with Asphalt Institute, *College Park, Md.*
9	Committee on Disaster Studies
	Working Committee on AASHO Road Test, *Chicago*
10–11	Titanium Steering Group, *Dayton, Ohio*
11	Ad hoc Panel on Stockpiling for Nasogastric Tube Feeding
12	Division of Biology and Agriculture, Executive Committee
	Division of Biology and Agriculture, Subcommittee on Precollege Education and Teacher Education, *Ithaca, N. Y.*
	Titanium Steering Group
	Committee on Growth, Section on Epidemiology
	Special Advisory Committee on Slab-on-Ground Study for FHA, Home Builders Committee
	Conference on Cellular Aspects of Basic Mechanisms in Radiobiology, *Bear Mountain, N. Y.*

May	
13	Subcommittee on the Nervous System
13–14	Division of Biology and Agriculture, Annual Meeting
15	Subcommittee on Cereal and Baked Products, *St. Louis, Mo.*
16	Ship Structure Subcommittee, Executive Group
	Committee on Medicine and Surgery
	Subcommittee on Shelter and Clothing
	Committee on Educational Policies, Subcommittee on Publications, *New York City*
17	Division of Biology and Agriculture, Subcommittee on Adult Education, *New York City*
	Subcommittee on Personnel and Training
17–18	Committee on Ship Steel
18–20	Committee on Army Medical Education, *Denver, Colo.*, and *El Paso, Tex.*
19	Committee on Cancer Diagnosis and Therapy
	Division of Earth Sciences, Chairmen of Committee on Fellowship Awards under the Fulbright Act
19–20	Committee on Landslides, *Columbus, Ohio*
20	Subcommittee on Food Supply
	National Research Council Postdoctoral Fellowship Board
21	Division of Mathematics, Annual Meeting
	Division of Medical Sciences, Annual Meeting
21–22	Committee on Guardrails and Guide Posts
	Committee on Educational Policies
22	Program Committee for International Conference on the Use of Antibiotics in Agriculture
23	Prevention of Deterioration Center, Scientific Advisory Committee
24	Exploratory Conference on Research on Mass Fires
	Committee on Selection Techniques
24–25	Committee on Loyalty in Relation to Government Support of Unclassified Research
	Special Advisory Committee on Slab-on-Ground Study for FHA
25	Highway Research Board Departmental Chairmen and Staff, Joint Meeting
25–26	Conference on Unclassified Nuclear Reactors, *University Park, Pa.*

May	
26	Committee on Flame and Thermal Protective Combat Clothing, *Natick, Mass.*
26–27	Committee on Instrumentation of AASHO Road Test
27	Subcommittee on Beta and Gamma Ray Measurements, *Chalk River, Canada*
	Subcommittee on Dairy Cattle Nutrition, *Chicago*
	Federal Construction Council, Task Group on Self-Contained Air Conditioners
27–28	Agricultural Board, *Chicago*
	Civil Defense Foods Advisory Committee
28	Committee on Disaster Studies
	USA National Committee, International Union Against Cancer
30–June 2	Committee on Developmental Biology, *Harriman, N. Y.*
June	
1	Subcommittee on Vector Control
	Panel on Vectors of Disease
2	Highway Research Board and U. S. Bureau of Public Roads, Joint Meeting
	Subcommittee on Anesthesia
2–3	Committee on International Exchange of Persons
3	Division of Anthropology and Psychology, Conference on Television as an Educational Tool
	Subcommittee on Waste Disposal
	Committee on Effects of Military Aircraft on Airfield Pavements
4	Subcommittee on Etiology and Pathology
	Subcommittee on Biochemistry
	Subcommittee on Clinical Investigation
	Committee on Dentistry
	Committee on Preservation of Indigenous Strains of Maize
6	Subcommittee on Water Supply
	Subcommittee on Stress
	Committee on Animal Breeding and Genetics, *Cold Spring Harbor, N. Y.*
6–7	Highway Research Board, Department of Traffic and Operations, *Chicago*
7	Conference on Procurement and Production of Rhesus Monkeys
	Committee on Sanitary Engineering and Environment
8	Division of Physical Sciences, Executive Committee
	Panel on Aircraft Plastics
9	Division of Physical Sciences, Annual Meeting
10	Conference on High Temperature Elastomers
11	Subcommittee on Fruits and Vegetables, *Columbus, Ohio*

June	
12	Subcommittee on General Products, *Columbus, Ohio*
	Committee on Genetics
13	Institute of Animal Resources
	Program Committee for Metal Curtain Wall Conference, *Pittsburgh, Pa.*
13–14	Committee on Growth, *Minneapolis, Minn.*
14	Panel on Mica
	Civil Defense Foods Advisory Committee, *Columbus, Ohio*
15	Committee on Foods, *Columbus, Ohio*
16	Subcommittee on Food Technology, *Columbus, Ohio*
	Subcommittee on Radiation Sterilization, *Columbus, Ohio*
	Subcommittee on Toxicology, *Philadelphia*
	Subcommittee on Food Stability, *Columbus, Ohio*
	Subcommittee on Instruments and Techniques, *Oak Ridge, Tenn.*
	Federal Construction Council, Task Group on Allowances for Office Space
17	Maritime Cargo Transportation Conference
17–18	Committee on Nutritional Anthropometry, *Cambridge, Mass.*
	Committtee on Guardrails and Guide Posts, *Orville, Ohio*
18	Food Protection Committee
19	National Academy of Sciences–National Research Council, Governing Board
20	Committee on Psychiatry
21	Committee on Nutrition, *New York City*
	Conference on Jet Ignition Capacitor Mica
22	Federal Construction Council, Task Group on Roof Decks and Built-up Roofing
	Subcommittee on Cereal and Baked Products, Symposium on Yeast, *Chicago*
23	Ad hoc Panel on Glycerol Pectate
23–24	Special Advisory Committee on Slab-on-Ground Study for FHA, Editing Committee
24	Federal Construction Council, Operating Committee
27	Panel on Prosthetics Research and Development
28	Building Research Advisory Board
29	Federal Construction Council, Task Group on Built-up Roofing
30	Federal Construction Council, Task Group on Building Electrical Loads
	Advisory Board on Quartermaster Research and Development, *Natick, Mass.*

NEW PUBLICATIONS

Bituminous Paving Mixtures. Fundamentals for Design. Highway Research Board Bulletin 105. Academy–Council Publication No. 355. 1955. 45 p. $0.75.

Map Standardization for a Loose-Leaf National Atlas. Recommendations of the Committee on a National Atlas of the United States. National Academy of Sciences–National Research Council. 1955. 5 p. + 2 maps.

Methods for Evaluation of Nutritional Adequacy and Status. A Symposium Sponsored by the Quartermaster Food and Container Institute for the Armed Forces Quartermaster Research and Development Command and [the] Medical Nutrition Laboratory. [Held at the] Oriental Institute, University of Chicago, February 25–26, 1954. Edited by Harry Spector and Martin S. Peterson. National Academy of Sciences–National Research Council. 1954. 313 p. (Available from: Quartermaster Food and Container Institute for the Armed Forces, Chicago.)

Modular Measure. The Edited Papers and Discussions of a Research Correlation Conference Entitled Modular Coordination: Its Value in Contemporary Building. Conducted by the Building Research Institute at the National Academy of Sciences, Washington, D. C., December 9, 1954. National Academy of Sciences–National Research Council. 1955. 66 p. $0.75. (Limited number of copies available.)

Report of the Committee on the Measurement of Geologic Time, 1953–54. Academy–Council Publication No. 333. 1955. 193 p. $1.75.

Report of the Committee on Roadside Development. Presented at the Thirty-Fourth Annual Meeting, January 11–14, 1955. Academy–Council Publication No. 356. 1955. 61 p. $0.90.

Tests on Large Culvert Pipe. Presented at the Thirty-Third Annual Meeting, January 12–15, 1954. Highway Research Board Bulletin 102. Academy–Council Publication No. 350. 1955. 18 p. $0.45.

Training Highway-Department Personnel. Presented at the Thirty-Third Annual Meeting, January 12–15, 1954. Highway Research Board Bulletin 103. Academy–Council Publication No. 351. 1955. 16 p. $0.45.

Trends in Land Acquisition. Presented at the Thirty-Third Annual Meeting, January 12–15, 1954. Highway Research Board Builletin 101. Academy–Council Publication No. 349. 1955. 82 p. $1.50.

Vehicle Climbing Lanes. Presented at the Thirty-Fourth Annual Meeting, January 11–14, 1955. Highway Research Board Bulletin 104. Academy–Council Publication No. 354. 1955. 33 p. $0.60.

Notice of Academy Meetings

NATIONAL ACADEMY OF SCIENCES

Autumn Meeting, California Institute of Technology, November 2–4, 1955
Annual Meeting, Washington, D. C., April 23–25, 1956

NATIONAL ACADEMY OF SCIENCES—NATIONAL RESEARCH COUNCIL

Governing Board, Washington, D. C., October 9, 1955

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